

eMAS Scale Factor Analysis

last updated 9/15/14

- eMAS calibration reference: [pre-deployment lab cal data for to Aug 02](#), [post-deployment lab cal cal thereafter](#)
- AFRL: using average of high-altitude data set
- GSFC analysis uses so-called "Pixel Aggregation" reflectance method unless otherwise noted
- RBA = Retrieval-Based Adjustment method
- RBF = Reflectance Band Fit
- VAMR = View angle matching region

Terra

[Band] CW (μm) or Cloud Retrieval	Pre/Post-Calibration Change	FL# 2: Aug 02, 2013 (Terra ~10° view angle pass, marine stratus - cloud not as thick as Oct 24)							FL#3: Sept 6 (Terra nadir, clear sky scene over land)						FL#2/19: Oct 24 (Terra nadir, marine Stratus over ocean and clear sky scene over land)						
		GSFC			Ames	RSP			GSFC			Ames	RSP			GSFC			Ames	AFRL	
		RBA	Refl w/view angle matching region (VAMR)	RBF Scale	RBF Offset	Rad	RBF Scale	RBF Offset	Refl (VAMR)	RBF Scale	RBF Offset	Rad	RBF Scale	RBF Offset	RBA	Refl (VAMR)	RBF Scale	RBF Offset	Rad	Rad	Vicarious / MCST
[1] 0.47	-7.1%		1.13	1.09	0.0051	1.01	NA	NA	1.03	0.76	0.0334	1.07	NA	NA		1.07	1.06	0.0071	1.10	1.05	1.06
[2] 0.55	-6.6%		1.02	1.01	-0.0015	0.88	NA	NA	0.91	0.66	0.0328	0.91	NA	NA		0.95	0.95	0.0021	0.95	0.92	0.96
[3] 0.65	-5.2%		1.02	0.98	0.0033	0.91	NA	NA	0.88	0.74	0.0223	0.92	NA	NA		0.94	0.94	-0.0008	0.97	0.94	0.98
[7] 0.86/tau _{2.1}	-6.5%	1.00	1.03	1.03	-0.0015	0.91	NA	NA	0.92	0.77	0.0427	0.95	NA	NA	0.92	0.93	0.93	0.0034	0.95	0.93	0.96
[10] 1.6/re _{1.6}	-4.9%	0.93	1.06	1.08	-0.0057	0.87	NA	NA	0.95	0.89	0.0166	0.96	NA	NA	0.89	0.97	0.96	0.0072	0.95	0.98	0.95
[20] 2.1/re _{2.1}	-4.6%	0.95	0.96	0.97	-0.0045	0.77	NA	NA	0.81	0.88	-0.0196	0.85	NA	NA	0.91	0.86	0.86	-0.0015	0.89	0.86	0.94

Aqua and Combined Comparison

[Band] CW (μm) or Cloud Retrieval	Pre/Post-Calibration Change	FL# 16: Aug 21 (Aqua ~15° view angle pass, clear sky scene over land)			FL#7: Sept 9 (Aqua ~15° view angle pass, clear sky scene over land)			FL#13: Sept 11 (Aqua ~15° view angle pass, clear sky scene over land)			Combination of all Comparisons except Aug 02 (Terra and Aqua)	
		GSFC			GSFC			GSFC			GSFC	
		Refl (VAMR)	RBF Scale	RBF Offset	Refl (VAMR)	RBF Scale	RBF Offset	Refl (VAMR)	RBF Scale	RBF Offset	RBF Scale	RBF Offset
[1] 0.47	-7.1%	1.01	0.81	0.0235	1.03	0.66	0.0393	1.01	0.87	0.0217	1.08	-0.0076
[2] 0.55	-6.6%	0.92	0.77	0.0160	0.92	0.67	0.0250	0.92	0.85	0.0104	0.96	-0.0043
[3] 0.65	-5.2%	0.84	0.77	0.0059	0.88	0.76	0.0088	0.88	0.82	0.0082	0.94	-0.0050
[7] 0.86/tau _{2.1}	-6.5%	0.92	0.62	0.1100	0.90	0.66	0.0750	0.90	0.80	0.0306	0.94	-0.0080
[10] 1.6/re _{1.6}	-4.9%	0.99	0.91	0.0135	0.96	0.87	0.0123	0.97	0.89	0.0163	0.98	-0.0041
[20] 2.1/re _{2.1}	-4.6%	0.81	0.77	0.0028	0.85	0.74	0.0060	0.84	0.80	0.0068	0.86	-0.0034